Amendment to the Claims:

The claims under examination in this application, including their current status and changes made in this paper, are respectfully presented.

1 (currently amended). A MAP decoding method, comprising the steps of:

performing a first sliding window operation in a first direction on at least a partial block of data, to ~~thereby~~ obtain first derived parameters;

performing a second sliding window operation in a second direction~~, which~~ that is opposite to said first direction, on at least a partial block of said data, to ~~thereby~~ obtain second derived parameters; and

processing said first and second derived parameters, to ~~thereby~~ generate data estimate values;

wherein each of said sliding window operations comprises a sequence of operations to be performed on each partial block of data;

and wherein each of said sliding window operations is ~~are~~ pipelined ~~with each other, to~~ so that a plurality of the operations in the sequence operate in parallel on different ~~respective portions~~ partial blocks of data.

2 (canceled).

3 (currently amended). A method for bi-directionally processing a block of data in a sequence of blocks of data, ~~which does not necessarily have a known state at endpoints thereof,~~ according to at least one sequencing constraint, comprising the steps of:

sequentially processing data elements of the block in a first direction, after first processing, in said first direction, prolog elements from an adjacent block ~~in said first direction~~ in accordance with said sequencing constraint; and

sequentially processing said data elements in a second direction, after first processing, in said second direction, prolog elements from an adjacent block ~~in said second direction~~ in accordance with said sequencing constraint.

4 (original). The method of Claim 3, wherein the processing of data elements in the first direction, and the processing of data elements in the second direction are done in parallel.

5 (currently amended). The method of Claim 3, wherein each step of processing data elements ~~is divided into separate stages, and the separate stages operate in parallel~~ comprises a sequence of operations to be performed on each partial block of data;

and wherein each of step of processing data elements is pipelined so that a plurality of the operations in the sequence operate in parallel on different data elements.

6 (currently amended). A method for parallel MAP processing of a lattice-coded block of data, comprising the steps of:

dividing the data into sliding window blocks, and, for each of multiple ones of said sliding window blocks,

a) sequentially processing the elements of the respective sliding window block in a first direction, after first processing, ~~prolog elements~~ in said first direction, prolog elements from an adjacent sliding window block in accordance with a sequencing constraint; and

b) sequentially processing the elements of the respective sliding window block in a second direction, after first processing, ~~prolog elements~~ in said second direction, prolog elements from an adjacent sliding window block in accordance with said sequencing constraint;

wherein said steps a) and b) are performed at least partly in parallel with each other.

7 (currently amended). The method of Claim 6, wherein at least one of steps a) and~~/or~~ b) ~~are divided into separate stages, and the separate stages~~ comprises a sequence of operations to be performed on each sliding window block;

and wherein the at least one of steps a) and b) is pipelined so that a plurality of the operations in the sequence operate in parallel on different sliding window blocks.

8 (currently amended). A method for parallel MAP processing on a plurality of sliding window blocks of data, comprising the steps of:

a) combining probability metrics on a first sliding window block of data in at least one adder tree; and

b) performing ~~an~~ a maximum-finding operation on a first previous sliding window block of data to combine ones of said metrics ~~which~~ that correspond to alternative possibilities;

wherein said steps a) and b) are at least partly performed in a parallelized pipeline relationship with each other.

9 (original). The method of Claim 8, wherein the maximum-finding operation is an exponent-logarithm equation.

10 (original). The method of Claim 8, wherein the maximum-finding operation is an estimation of an exponent-logarithm function.

11 (currently amended). The ~~A~~ method of ~~parallel MAP processing~~ of claim 8, further comprising ~~the steps of~~:

~~a) combining probability metrics in at least one adder tree;~~

~~b) performing a maximum-finding operation to combine ones of said metrics which that correspond to alternative possibilities;~~

c) performing a normalization operation on the results of said step b) on a second previous sliding window block of data;

wherein said steps a), b), and c) are at least partly performed in a parallelized pipeline relationship with each other.

12 (original). The method of Claim 11, wherein the maximum-finding operation is an exponent-logarithm equation.

13 (original). The method of Claim 11, wherein the maximum-finding operation is an estimation of an exponent-logarithm equation.

14 (currently amended). A system for MAP processing of a data stream, the data stream being divided into sliding window blocks, comprising:

an alpha generation process;

a beta generation process;

wherein each of the alpha generation process and the beta generation process ~~are~~ is divided into multiple pipelining stages to operate on multiple sliding window blocks using alpha and beta prologs, respectively.